

DOCUMENT RESUME

ED 377 152

SP 035 554

AUTHOR Danaher, P. A.; And Others
TITLE Teachers' Professional Development through Open Learning Technologies. Draft.
PUB DATE 4 Jul 94
NOTE 16p.; Paper presented at the Annual Meeting of the Australian Teacher Education Association (24th, Brisbane, Queensland, Australia, July 3-6, 1994).
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Access to Education; *Distance Education; *Educational Technology; Elementary Secondary Education; Foreign Countries; Higher Education; Information Technology; *Inservice Teacher Education; *Professional Development; Teachers
IDENTIFIERS *Australia; *Open Learning

ABSTRACT

This paper discusses the consequences of open learning for professional development of Australian teachers, highlighting the negative consequences of having an instrumental view of open learning predicated on forms of electronic information technology which to all intents and purposes appear central to the learning process. The paper points out that tensions and contradictions are evident in distance educators' discussions of "educational," "instructional," and "learning" technologies. These incongruities include technology's reputed capacity to simulate face-to-face learning for distance students, technology's reputed capacity to enable the distance teacher to control the learning situation, and the proposition that distance students should be forced to use available technology to ensure equitable access to learning opportunities. Open learning technologies exist in uneasy tension with education/culture, as they have the potential to be used as strategies of control and marginalization. If professional development programs using open learning technologies are to empower participating teachers, they will need to strike a balance between these opposing forces or else lose all meaning and purpose in the process. (Contains 19 references.) (JDD)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

Teachers' Professional Development Through Open Learning Technologies

P. A. Danaher
Lecturer in
Open and
Distance Learning

V. L. Bartlett
Professor and
Dean of
Education

L. O. Rowan
Senior Research
Officer in
Education

Faculty of Education
Central Queensland University
Rockhampton 4702

Paper presented at the 24th annual conference of the Australian Teacher Education Association,
Gardens Point Campus, Queensland University of Technology, Brisbane, 4 July 1994.

PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

P. P. Danaher

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☐ This document has been reproduced as
received from the person or organization
originating it.

☐ Minor changes have been made to improve
reproduction quality.

☐ Points of view or opinions stated in this docu-
ment do not necessarily represent official
OEI position or policy.

Abstract

If teachers are to be empowered professionals, there needs to be change in certain curriculum and pedagogical practices when the provision of professional development is attempted through open learning technologies. We conceive of the technologies of open learning to be socially constructed and highly contextualised. We further suggest that professional development programs for teacher education delivered through open learning technologies have the potential to be used as strategies of surveillance and control. Nevertheless, empowered professionals are able to recognise their marginalising potential. Technologically 'literate' teachers can subvert and appropriate them to serve their own needs and interests.

Unless open learning technologies incorporate understandings of the origins and evolution of curriculum and pedagogy, such technologies will continue to be seen purely as hardware and its applications. Consequently, professional development programs that appeal to a narrower conception of technology as hardware will elide or bypass rather than empower teachers. The paper draws upon current research being conducted at Central Queensland University into open and distance learning, and open learning for teachers' professional development.

Teachers' Professional Development Through Open Learning Technologies

Introduction

The provision of professional development programs for teachers by Faculties of Education in Australian universities has not been exempt from the heraldry of open learning: a so called 'new' approach to education which is seen by its proponents to have the effect of increasing access during a period of fiscal constraint.¹ Open learning in higher education is characterised in policy documents (Baldwin, 1991) with words such as 'flexibility' and 'diversity'. A statement by Simon Crean, the newly appointed Commonwealth Minister for Employment Education and Training to the Federal Parliament on February 21, 1994 exemplifies the thrust of these texts:

But our commitment to open learning is our further support for spreading the ability to expand opportunity in higher education as well as bringing much more flexibility to enable those people who cannot physically visit a campus - for whatever reason - to nevertheless gain learning and higher education, including the qualifications that go with that.

...So we have seen very significant success to date in open learning. The government and the institutions are meeting the challenge in terms of both learning opportunities and skill formation. (Hansard, 1994, p. 911)

This challenge/solution has flowed through into policy and strategic statements relating to the professional development provision for teachers (Lundin, Williams, Bartlett, Gerber, & Scriven, 1991; Lundin, Sandery, Hansford, Bartlett, Birkett, Harrold, Klich, & Williams, 1993). In this context, the term 'open learning' refers to codes of teaching/learning which incorporate technologies as technical aids. The term represents a view of learning predicated on forms of electronic information technology which to all intents and purposes appear central to the learning process. This paper focuses on the consequences of this instrumental definition of open learning for teachers' professional development and seeks to highlight the negative

¹There are a number of problems with this notion, not the least of which relates to the way in which it highlights a purely political strategy whereby the government can be seen to solve equity/access problems.

consequences of such definitions.

The paper is structured around three organising ideas:

- the tensions and contradictions in technology's role in distance education that are likely to be carried over into technology's place in open learning
- a theoretical orientation for examining the use of open learning technologies in professional development programs
- the implications of these two sections for professional development programs that seek to 'empower' rather than 'control' participating teachers.

Before moving into a discussion of each of these areas, however, it is important to acknowledge that there are several assumptions which underpin our argument. First, open learning is assumed by us to be a highly problematic term and certainly more disputatious than the incorporated/instrumental definition referred to above. Similarly, we would argue that there are many ways of conceptualising the notion of technology (see Danaher, Bartlett, & Rowan, 1994). In this paper, however, we are working with (and interrogating) a definition of open learning which equates the term unproblematically with technology. Second, for the purposes of this paper we refer to technology as hardware with its consequent impact on the learner. Third, we seek to emphasise the populist or mainstream understandings of how the two previous terms combine to produce a notion of *open learning technology*. From this basis we will conduct a theoretical analysis of the connection between open learning technology and teachers' professional development in a way which will emphasise the consequences that these limited definitions have for the efficacy of professional development programs.

Underlying the central argument of the paper is our belief that professional development programs which appeal to narrow conceptions of technology as hardware and open learning as a synonym for technologically assisted learning may actually construct barriers for teachers' development and, as a consequence, may ultimately elide or bypass the people they are intended to empower. In such a reading these professional development programs can be seen, at best, as ineffective and frequently as counterproductive. This is because technologically 'literate' teachers (those who can 'read off' discourses of technology *and* act on that understanding) who participate in professional development programs are able to subvert and appropriate the open learning technologies to serve their own needs and interests.

Tensions and Contradictions of Technology's Role in Open Learning and Distance Education

The electronic information technologies supporting the 'brave new world' at the heart of 'open learning' have been largely appropriated from the field of distance education. Some few distance educators have questioned the assumption that using machines to 'overcome' spatial and temporal separation will automatically lead to increased learning. The Norwegian writer Erling Ljoså (1992, p. 91) stated baldly, "Every time we introduce a new technology in a distance education system, we run the risk of introducing a new barrier to participation and learning". Bigum and his colleagues (Bigum, Fitzclarence, Kenway, Collier, & Croker, 1993) related the emergence of the Open Learning Initiative (OLI) to three interrelated elements: education, markets, and information technologies. This brings to mind the First Triumvirate of ancient Rome, with the respected general Pompey personifying education, the plutocrat Crassus embodying the power of the markets, and the wily politician Julius Caesar encapsulating information technologies. Also in this vein, Noble (1991) traced the applications of educational technologies to their development in the United States military. Our own work (Danaher, Bartlett, & Rowan, 1994) suggests that the current debate about educational technologies reflects the predominance of a highly rational and technocratic code or way of thinking about curriculum and pedagogy which act as barriers to any well developed idea of openness.

The community of scholars/teachers most frequently identified (incorrectly) with 'open learning' are distance educators. There are several reasons for this, not least of which is that technology enhancement is invariably included as a defining attribute of distance education. Hence, the focus of our discussion initially is on distance education.

Tensions, contradictions - even paradoxes - are evident in distance educators' discussions of 'educational', 'instructional', and 'learning' technologies. This section of the paper elaborates some of these incongruities, not in order to identify distance education as being more confused or uncertain than other academic disciplines, but rather to sound a warning note. If the role of technology in distance education remains non-controversial and unresolved, there is every reason to believe that open learning technologies will have the same role and consequent effects. In the context of this paper, this situation has serious implications for the professional development of Australian teachers.

We have selected three sets of ambiguous understandings of technology in distance education for comment:

- technology's reputed capacity to **simulate face to face learning for distance students**
- technology's reputed capacity to **enable the distance teacher to control the learning situation**
- the proposition that distance students should be forced to use available technology to ensure **equitable access to learning opportunities**.

Technology as simulating face to face learning for distance students

Distance educators are fond of asserting that their teaching and subsequent learning outcomes have a distinctive character. To this end, comments are often made that distance education students tend to be more highly motivated than their face to face counterparts (because there are fewer distractions than in a conventional classroom, and because they need to be more committed in order to overcome the inherent difficulties of studying at a distance). A related conviction is that 'specialist' training and professional development exercises need to be provided to distance education teachers, and that the 'generic' attributes and skills of classroom teaching cannot simply or easily be transferred *in toto* to the distance mode.

At the same time, many distance educators welcome the rapid development of telecommunications technologies, precisely because they supposedly enhance or clone conditions for the teaching/learning interactions of a conventional classroom. Thus, the more recent innovation of teaching through videoconferencing is preferred to audioconferencing because students can see as well as hear one another and the teacher. Not only does this view appear to undermine the claim for the 'special status' of distance education; it also flies in the face of long standing research that renders questionable the proposition of face to face learning *per se* as the Holy Grail of education.²

²It has been argued (Luke, 1993; Spivak, 1990) that distance education is 'better' than face to face education because of the way in which many on-campus schooling systems regularly marginalise female students, students from 'racial'/ethnic minority groups, and so on. By these criteria, internal study is not necessarily an 'ideal' curriculum and pedagogic form.

Technology as enabling the distance teacher to control the learning situation

Perhaps as part of a political strategy to garner greater cultural capital for their discipline, some distance educators are keen to assert that 'open learning' began with distance education, and that part of its 'special status' lies in its being student-centred and individualised (Sewart, 1993). The production of targeted print and other materials, and the provision of individualised support services, are examples of practices that are claimed to demonstrate distance education's supposed capacity to permit greater learner autonomy, choice, and flexibility.

Yet there is a simultaneous and opposing reason for welcoming increasingly sophisticated instructional technology into distance education. This is that lecturers engaged in videoconferences can see what is happening in classrooms at other sites, and that they can more readily control what happens during the videoconference. Even with audioconferencing, naming individual students and asking them to answer questions is cited as an effective way of keeping all students 'on task' and of ensuring their attention and participation. While these strategies are also common in conventional classrooms, they appear to be in tension with calls for autonomous learning or greater freedom for learners.

Compulsory student use of technology to ensure equitable access to learning opportunities

A common concern among distance educators is with equity of access to learning opportunities for distance students. There is clearly a belief in some quarters that distance students 'miss out' on certain benefits that accrue from face to face teaching. In addition, a continuing issue is the cost of technological hardware, which prohibits at least some distance students from gaining access to the technical 'wizardry' available to their peers. On a global scale, the same inequities are evident, with many 'third world' countries being unable to supply enough textbooks and other print materials to all their students, while more technologically advanced countries are much further along 'the information super highway'.

Given these concerns with equity of access, it is surprising that some distance educators advocate the compulsory use of particular technologies by students in specific courses. Stated reasons for this advocacy range from a desire to prevent some students from 'missing out' to the advantages of 'economies of scale' in using very expensive technological hardware. Yet this reasoning would appear to contradict the status of technological media as 'learning enhancements', rather than as instructional strategies; and it would also appear to violate a

fundamental tenet of learner autonomy.

The next section of the paper presents a theoretical orientation to open learning technologies that informs our understanding of the provision of professional development programs for Australian teachers. This theoretical orientation also helps to explain at least some of the aforementioned contradictions in distance education: distance educators are reflecting different 'speaking positions', derived from whether they are emphasising strategies of surveillance or tactics of subversion, and from the particular *habitus* guiding their thinking - all in the context of a traditionally marginalised academic discipline and a routinely devalued form of curriculum and pedagogy represented in open and distance learning.

A Theoretical Orientation to Open Learning Technologies

Our intention in this section is to discuss two opposing ways of reading teachers' positions in relation to technology as it impacts upon their professional development and their professional practice. The first part of the section outlines the connection which Foucault identifies between institutional organisation and surveillance; the concurrent connection between surveillance and power; the relationship of power to the production/maintenance of regulative norms; the impact of these norms on continuing institutional practice; and the resultant production of 'powerless' and 'passive' individuals.

The second part of the section will look at the ways in which people are able to resist the procedures and marginalising strategies which impact negatively on their professional and personal practices. We will look at de Certeau's work on conscious and unconscious tactics of subversion, Pierre Bourdieu's discussion of *habitus*, and the ability of all individuals to appropriate, subvert, or resist the systems of control which seek to render them passive or helpless. We shall also suggest that the process of resistance has a cumulative nature and that when a certain 'critical mass' of awareness and resistance is reached then the original implications and applications of any strategy of control can be displaced.

Institutions/surveillance/Foucault

In his text *Discipline and Punish* (1979), Michel Foucault cites the architectural and ideological organisation of the classroom as illustrative of the ways in which power is connected to

surveillance. He highlights the means by which the 18th century implementation of surveillance in prisons, classrooms, hospitals, and military camps became (as a consequence of repetition) representative and illustrative of the 'typical' and 'best practice' institution. Surveillance was gradually produced as a natural practice: one which ensured productivity, responsibility, and economic achievement.

Foucault concentrates, in his educational examples, on the surveillance of students, but the same arguments can be applied to any institutional system where accountability is linked to visibility and knowledge. That is, wherever there is a hierarchy that positions people with access to all information 'at the top' and people who are part of the information at various stages down the scale; and when it is accepted that those 'at the top' have a natural right and indeed a responsibility to make meaning out of the information pool at the bottom, surveillance is in operation. A quotation from Foucault summarises the situation:

...although surveillance rests on individuals, its functioning is that of a network of relations from top to bottom, but also to a certain extent from bottom to top and laterally; this network 'holds' the whole together and traverses it in its entirety with effects of power that derive from one another: supervisors, perpetually supervised. (1979, p. 177)

James Ryan summarises the process well when he writes:

Power in this instance rests with the entire technology - the architectural formations, the distribution of bodies in space, the practices of surveillance, the accumulation of knowledge - and not with an individual...The technologies of power are related to discourses (i.e., programs) and integrated into general strategies. (1991, p. 111)

Both Foucault and Ryan acknowledge not only the interconnection of institutionalised practice and surveillance but also the unproblematic, unconscious acceptance of the relationship between the two. That is, it is commonplace for people to accept that where there is power there is surveillance. People operate under the assumption that they are being watched, regardless of whether this is the case (and also regardless of how they feel about this). Indeed, the actuality of surveillance is far less important than its expectation.

Paramount among the implications of surveillance is the development of both regulative norms and individual passivity: that is, constant observation, or its illusion, quickly produces slavish

adherence to standards, procedures, and expectations, because there are no workable, or accessible, alternatives. Ryan makes the point well:

...observational practices, supplemented by other means of making subjects visible, supply knowledge that allows for the construction and supervision of valued norms. However, the inevitable comparisons both with each other and with these norms generate inequalities. Thus it becomes apparent that schools, along with many other institutions in the modern world that adopt what Foucault refers to as disciplinary technology, cannot but help produce these inequalities, for the production of these unequal differences is but an integral component of such a system. (1991, p. 118)

We have no problem with most of this. Indeed, we believe that it is all but self evident that institutional locations continually introduce and naturalise behavioural and ideological 'norms'. It is equally true that people within such systems often participate in the maintenance of these 'norms' by reproducing the discourse or practice which they identify as mainstream and rewarding. It is quite common, for example, for people to demonstrate their competence in a particular area in order to ensure the security of their position without necessarily understanding or accepting the very practices they employ. As Bourdieu (1979a) notes, when placed in a context where it is clear that a particular discourse and set of practices is 'normal', people will frequently produce the discourse which they feel would be most appropriate for that space. To take the mainstreaming of technological practice as an example: when articulating their understanding of technology, teachers can also be seen to be responding to their own understanding of what constitutes the dominant discourse about technology in the schooling/professional development context.

However, we also believe it is inaccurate and unproductive to assume that individuals within these systems are automatically and unproblematically rendered helpless. In fact, we would argue that people quite regularly exist within a normative system without ever engaging in complicity in the naturalisation of these norms. This leads the discussion to tactics of subversion.

Tactics of subversion

In de Certeau's terms, tactics of subversion are "models of action" (1988, p. xi) or "ways of operating (1988, p. xix) "which cannot count on a 'proper' (a spatial or institutional)

localisation" (1988, p. xix) They are practices which, unlike strategies of marginalisation, lack organised and authorised support, but which nevertheless work against dominant strategic systems. John Frow has described a tactic thus:

A set of procedures that "produce without capitalising" (without controlling time), it is "articulated on situations and the will of the others" and its place "belongs to the other. A tactic insinuates itself into the other's place, fragmentarily, without taking it over in its entirety, without being able to keep it at a distance". (1991, p. 50)

Tactics, in other words, comprise the practices of everyday life employed by the marginalised to survive within the discourses and practices of the centre. In de Certeau's view they are subversive "models of action" (1988, p. xi) characteristic of those who have "status as the dominated element in society (a status which does not mean that they are either passive or docile)" (1988, pp. xi-xii).

De Certeau outlines two primary models by means of which the marginal rework the dominant system. The first of these is a model of subversion which he illustrates with reference to the South American Indians who were 'conquered' and 'civilised' by the Christians of Spain. Though the Indians remained outwardly submissive to the Spanish they

...often made of the rituals, representations, and laws imposed on them something quite different from what their conquerors had in mind; they subverted them not by rejecting them, but by using them with respect to ends and references foreign to the system they had no choice but to accept. (1988, p. xiii)

This ability to subvert without leaving a dominant institution is also discussed by Bourdieu, in his work on the notion of habitus, which is described as any individual's collective body of experience which informs all impromptu activity and thought; it is often described as 'competence'. Bourdieu suggests that an individual's responses to the politics which inscribe and reinscribe her/his position outside dominant discourse are formulated as the result of innumerable past experiences and generally surface without regard to the conscious will of the person. Conscious or otherwise, as Bourdieu acknowledges, "these responses are defined in the present, things to do or not to do, to say or not to say, in relation to a *forthcoming* reality" (1979b, p. 76).

In other words, it is a consequence of past experience that individual subjects are able to identify the best response to a particular eventuality, regardless of whether they have encountered that situation before. This operation, and the conscious process which *can* accompany, in Bourdieu's theory, an unconscious response, is illustrated by de Certeau's second model of tactical action which provides evidence of a conscious subversion of authority. The model is a general one which outlines the desire and ability of the 'other' to poach on the time and places of the centre. This is "the worker's own work disguised as work for his employer" (1979b, pp. 25-26).

We would suggest that both of de Certeau's tactical models are useful in acknowledging the ability of all groups/individuals to fight back against repressive actions or ideologies, regardless of the degree of repression, by using whatever means are available. More than this, however, the marginal, through diverse and repetitious acts of subversion, can undermine dominant discourse to such an extent that the reductive definitions of 'centre' and 'margin' - which necessitate an awareness of 'strategy' and 'tactic' in the first place - become in themselves meaningless.

Implications for Professional Development Programs

Rob McBride concluded his summary of a collection of papers about the inservice training of teachers in England and Wales (1989) with the following provocative statement:

It is sad and ironical, not least for the children in state schools, that the only way teachers will develop professionally is by being creatively compliant with, or subversive of, current national policy. (p. 192)

While our own view of the Australian situation is not necessarily as extreme as that of McBride, his claim does serve to underline the importance of the main theses of this paper. We argue that the application of open learning technologies defined instrumentally as technical aids, in themselves a contentious and potentially self contradictory phenomenon, to professional development programs for Australian teachers needs to be approached with caution, if not scepticism. Specifically, the assertion expounded here is that, to be 'empowering' to participants in professional development programs, open learning technologies need to be embedded in the understandings of the origins and evolution of curriculum and pedagogy; and that program designers need to contest the heavily rational and technocratic thinking

underpinning such technologies.

In terms of the theoretical orientation outlined in the previous section of the paper, we contend that surveillance is only a 'problem' if people do not know or understand what they are supposed to be doing and therefore expose themselves to censorship or retribution. It is therefore vital for the productivity of any organisation that employees are made aware of what it is they are expected to do, in other words, the norms. Enter professional development for teachers, which is consistently presented as the solution to a whole range of problems: any time that a new responsibility or opportunity is devolved to or developed for people in the schooling system, it is accompanied by a managerial acknowledgment that people will naturally need to be provided with appropriate professional development.

However, we have grave concerns about professional development programs that embrace open learning technologies so that they appeal to dominant understandings of what is 'valued' in terms of educational capital, and that produce/reproduce technologically based information sessions, without analysing the reasons for and the impact of these programs; and without at some level accepting or acknowledging the connection between education and power. It is highly likely that such programs will simply reproduce a dominant, technologically informed discourse that depends on, and develops out of, the regulative norms which go hand in hand with surveillance and lead us back to tactics of subversion. In other words, without a quota of self reflexivity, professional development programs can function as further strategies of marginalisation which will engender further tactics of subversion. They will undermine themselves.

Conclusion

The authors of this paper consider themselves to be neither 'Technophiles' (as described by Postman, 1992, cited in Mack, 1993, p. 201) nor 'Luddites'. However, we do agree that technologies - specifically open learning technologies - exist in uneasy tension with education/culture. On the other hand, for us this tension has much more to do with strategies of control and marginalisation, and with tactics of subversion and resistance, than with the seductive character of technology. If they are to 'empower' participating teachers, professional development programs using open learning technologies will need to strike a balance between these opposing forces, or else lose all meaning and purpose in the process.

References

- Baldwin, P. (1991). *Higher education: Quality and diversity in the 1990s*. Canberra, ACT: Australian Government Publishing Service.
- Bigum, C., Fitzclarence, L., Kenway, J., Collier, J., & Croker, C.-A. (1993). That's edutainment: Restructuring universities and the Open Learning Initiative. *The Australian Universities' Review*, 36(2), 21-27.
- Bourdieu, P. (1979a). *Distinction: A social critique of the judgement of taste* (trans. by R. Nice). London, UK: Routledge.
- Bourdieu, P. (1979b). *Outline of a theory of practice* (trans. by R. Nice). Cambridge, UK: Cambridge University Press.
- Danaher, P. A., Bartlett, V. L., & Rowan, L. O. (1994). Interrogating constructions of technology in a Distance Education Centre. In *Distance education: Windows on the future - Conference proceedings* (pp. 370-374). Wellington, NZ: New Zealand Correspondence School.
- de Certeau, M. (1988). *The practice of everyday life* (trans. by S. F. Rendall). Berkeley, CA: University of California Press.
- Foucault, M. (1979). *Discipline and punish* (trans. by A. Sheridan). New York, NY: Random House.
- Frow, J. (1991). Michel de Certeau and the practice of representation. *Cultural Studies*, 5(1), 52-60.
- Ljoså, E. (1992). Distance education in a modern society. In A. Tait (Ed.), *Key issues in open learning - a reader: An anthology from the journal Open Learning 1986-1992* (pp. 80-93). Harlow, UK: Longman.
- Luke, C. (1993). Women in higher education: Gendered discourse and cultural power. In D. Baker & M. Fogarty (Eds.), *A gendered culture: Educational management in the nineties* (pp. 55-74). St Albans, VIC: Victoria University of Technology.
- Lundin, R., Sandery, P., Hansford, B., Bartlett, V. L., Birkett, P., Harrold, R., Klich, Z., & Williams, H. (1993, November). *Open learning for teachers' professional development: Consultancy report*. Canberra, ACT: Department of Employment, Education, and Training.

- Lundin, R., Williams, H., Bartlett, V. L., Gerber, R., & Scriven, B. (1991, November). *Open access for teachers' professional development: Towards a cooperative national policy framework for the application of distance learning to the professional development of teachers*. Canberra, ACT: Department of Employment, Education, and Training.
- Mack, D. E. (1993, winter). Technology: Whose reality? [review of *Technopoly: The surrender of culture to technology*]. *The Educational Forum*, 57, 201-202.
- McBride, R. (1989). Summary. In R. McBride (Ed.), *The in-service training of teachers: Some issues and perspectives* (pp. 187-192). London, UK: Falmer Press.
- Noble, D. D. (1991). *The classroom arsenal: Military research, information technology, and public education*. London, UK: Falmer Press.
- Postman, N. (1992). *Technopoly: The surrender of culture in technology*. New York, NY: Alfred A. Knopf.
- Ryan, J. (1991, August). Observing and normalising: Foucault, discipline, and inequality in schooling. *The Journal of Educational Thought*, 25(2), 104-119.
- Sewart, D. (1983). Individualising support services. In J. S. Daniel, H. A. Stroud, & J. R. Thompson (Eds.), *Learning at a distance: A world perspective* (pp. 75-79). Athabasca, Alberta: Athabasca University.
- Spivak, G. C. (1990). Explanation and culture: Marginalia. In R. Ferguson, M. Gever, T. T. Minh-ha, & C. West (Eds.), *Out there: Marginalisation and contemporary cultures* (pp. 377-393). New York, NY and Cambridge, MA: The New Museum of Contemporary Art and the Massachusetts Institute of Technology Press.